

Appln. Serial No. 10/032,414  
Amendment Dated September 12, 2007  
Reply to Office Action Mailed June 13, 2007

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AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

- 1 1. (Original) A method of initiating a media call over a packet-switched network
- 2 comprising:-
- 3 (a) issuing a call set-up request at a first terminal having an address in a first address
- 4 range, the call set-up request being destined for a second terminal in a separate network having
- 5 an address in a second address range which overlaps with the first address range,
- 6 (b) passing the call set-up request to a first call server communicatively coupled to
- 7 the first address range,
- 8 (c) passing the call set-up request from the first call server to a second call server
- 9 communicatively coupled to the second address range,
- 10 (d) causing the call servers to negotiate a port at each respective addresses of the
- 11 terminals for subsequent communication once the call is set-up,
- 12 (e) providing a first address translator having a first range address in the first address
- 13 range,
- 14 (f) providing a second address translator having a second range address in the second
- 15 address range,
- 16 (g) causing the first call server to provide the first terminal with the first range
- 17 address of the first address translator as its destination address for the call,
- 18 (h) causing the second call server to provide the second terminal with the second
- 19 range address of the second address translator as its destination address for the call,
- 20 (i) arranging for the first address translator to pass data received at the first range
- 21 address from the first terminal at the negotiated port to the second address translator for onward
- 22 communication to the address of the second terminal at the negotiated port, and
- 23 (j) arranging for the second address translator to pass data received at the second
- 24 range address from the second terminal at the negotiated port to the first address translator for
- 25 onward communication to the address of the first terminal at the negotiated port,
- 26 whereby two-way communication is established between the first and second terminals
- 27 via the first and second address translators.

Appln. Serial No. 10/032,414  
Amendment Dated September 12, 2007  
Reply to Office Action Mailed June 13, 2007

1 2. (Original) A method according to claim 1, wherein the first and second address  
2 translators are integrated in a single device having external addresses in the first and second  
3 address ranges.

1 3. (Original) A method according to claim 1, wherein the first and second address  
2 translators each have a third range address in a third address range which is common between the  
3 address translators, wherein the respective third range address of the second address translator is  
4 provided to the first address translator by at least one of the call servers and vice versa, and  
5 wherein data passed between the address translators is passed via their respective third range  
6 addresses.

1 4. (Original) A method according to claim 1, wherein the call servers each have a fourth  
2 range address in a fourth address range which is common between the call servers.

1 5. (Original) A method according to claim 1, wherein the first and second address ranges  
2 are IANA reserved private IP address ranges as defined in RFC 1918.

Appln. Serial No. 10/032,414  
Amendment Dated September 12, 2007  
Reply to Office Action Mailed June 13, 2007

1 6. (Currently Amended) A first call server in a first packet-switched network for setting up  
2 ~~VoIP calls from an originating terminal in the first network having an address in a first address~~  
3 ~~range to a destination terminal in a second packet-switched network having an address in a~~  
4 ~~second address range, the second address range overlapping with the first address range, the first~~  
5 ~~call server comprising: -~~

6 ~~[[a)] a terminal controller arranged to receive a call set-up request from [[the]] an~~  
7 ~~originating terminal in the first packet-switched network, wherein the first call server is~~  
8 ~~responsive to the call set-up request to set up a VoIP call from the originating terminal in the first~~  
9 ~~packet-switched network having a first address range to a destination terminal in a second~~  
10 ~~packet-switched network having a second address range that overlaps with the first address~~  
11 ~~range, the terminal controller arranged to further [[and]] provide the originating terminal with a~~  
12 ~~first range address of an address translator in the first network as its destination address for the~~  
13 ~~call, the first range address being in the first address range and the call set-up request being~~  
14 ~~destined for the destination terminal;~~

15 ~~[[b)] an address translator controller arranged to provide to the address translator, [[the~~  
16 ~~IP]] an address of the originating terminal in the first network as derived from [[a]] the call~~  
17 ~~set-up request received by the terminal controller;~~

18 ~~(c) — an output adapted to pass the call set-up request to a second call server in a second~~  
19 ~~network, the second call server being communicatively coupled to the second address range;~~

20 ~~(d) — means adapted to negotiate a port at the first address of the originating terminal~~  
21 ~~for subsequent communication once the call is set up;~~

22 ~~thereby establishing two-way communication between the originating terminal and the~~  
23 ~~destination terminal via the first address translator and a second address translator.~~

1 7. (Currently Amended) A first call server according to claim 6 including intra-server  
2 communication means arranged to communicate with ~~another~~ a second call server to obtain an IP  
3 address and port for [[a]] the destination terminal which is under the control of the [[other]]  
4 second call server and wherein the address translator controller is further arranged to provide the  
5 IP address and port of the destination terminal to [[an]] the address translator.

Appln. Serial No. 10/032,414  
Amendment Dated September 12, 2007  
Reply to Office Action Mailed June 13, 2007

1 8. (Cancelled)

1 9. (Currently Amended) [[An]] A first address translator in a first network, the first  
2 ~~network including a first terminal having an address in a first address range and a first call server~~  
3 ~~communicatively coupled to the first address range, the address translator having a first range~~  
4 ~~address in the first address range, the address translator comprising:-~~

5 [[a)] a terminal port for communicating with [[the]] a first terminal in the first network,  
6 wherein the first network has a first address range, and the first network further has a first call  
7 server, and wherein the first address translator has a first range address in the first address range,

8 [[b)] a translator port for communicating with another a second address translator in a  
9 second network having a second range address in a second address range, the second address  
10 range overlapping with the first address range and

11 [[c)] a control port for communicating with the first call server, the first call server  
12 being adapted to provide the first terminal with the first range address of the first address  
13 translator as its destination address for the call and negotiate a port at the first address of the  
14 terminal for subsequent communication once a call is set up;

15 wherein when the first address translator receives a message at the first range address  
16 from the first terminal at the negotiated port, the address translator routes the message to the  
17 second address translator replaces its address with the second range address of the another  
18 address translator at the negotiated port;

19 whereby two-way communication is established between the first and second terminals  
20 via the first and second address translators.

1 10. (Currently Amended) [[An]] A first address translator according to claim 9, including a  
2 controller arranged to receive at the control port, information relating to an IP address of another  
3 the second address translator which is reachable via the translator port and corresponding  
4 information relating to an IP address of an originating the first terminal and to pass data received  
5 at the terminal port from the originating first terminal to the corresponding first address translator  
6 via the translator port.

Appln. Serial No. 10/032,414  
Amendment Dated September 12, 2007  
Reply to Office Action Mailed June 13, 2007

1 11. - 12. (Cancelled)

1 13. (Currently Amended) A first packet-switched network having a first address range, a call  
2 server communicatively coupled to the first address range, a terminal having an address in the  
3 first address range and ~~[[an]]~~ a first address translator having a first range address in the first  
4 address range, the call server being arranged to provide the terminal with the first range address  
5 of the first address translator as its destination address for a call, to control the first address  
6 translator and to generate a mapping in the first address translator between the address of the  
7 terminal in the said first packet-switched network and a second range address of ~~another~~ a  
8 second network address translator in a second packet-switched network having a second address  
9 range, the second address range overlapping with the first address range, the first address  
10 translator being arranged to communicate with the ~~[[other]]~~ second address translator to allow  
11 communication with a second terminal in the second network, the call server further being  
12 arranged to negotiate a port at ~~each respective addresses~~ the address of the terminals first  
13 terminal for subsequent communication once a call is set-up.

Appln. Serial No. 10/032,414  
Amendment Dated September 12, 2007  
Reply to Office Action Mailed June 13, 2007

1 14. (Currently Amended) A method of setting up a call between a first packet-switched  
2 network and a second packet-switched network, the networks having [[a]] first and second  
3 address ranges respectively, the first address range overlapping with the second address range  
4 comprising:-

5 [[a)] receiving a call setup request from a first terminal in ~~a first of the networks~~ the  
6 first network, the call being destined for a second terminal in the second network,

7 [[b)] negotiating a port at the address of the first terminal for subsequent  
8 communication once the call is set-up,

9 [[c)] providing the first terminal in the first network with a first range address of [[an]]  
10 a first address translator in the first network for use as the first terminal's destination address, the  
11 first range address being in the first address range,

12 [[d)] notifying the first address translator of an address to which data received from the  
13 first terminal in the first network~~[[,]]~~ should be passed, the address being for [[an]] a second  
14 address translator having a second range address in the second address range and being situated  
15 in the second network, the second address translator ~~in the second network~~ being adapted to pass  
16 data received at the second range address to the second terminal,

17 whereby two-way communication is established between the first and second terminals  
18 via the first and second address translators.

Appln. Serial No. 10/032,414  
Amendment Dated September 12, 2007  
Reply to Office Action Mailed June 13, 2007

1 15. (Currently Amended) Software in a computer readable medium which when executed on  
2 suitable hardware in a call server causes the hardware to carry out the steps of:-

3 [[(a)]] receiving a call setup request from a first terminal in a first network, the call being  
4 destined for a second terminal in a second network, the first network and the second network  
5 having a first address range and second address range respectively, the first address range  
6 overlapping with the second address range,

7 [[(b)]] negotiating a port at the address of the first terminal for subsequent  
8 communication once the call is set-up,

9 [[(c)]] providing the first terminal in the first network with a first range address of [[an]]  
10 a first address translator in the first network for use as the first terminal's destination address, the  
11 first range address being in the first address range,

12 [[(d)]] notifying the first address translator of an address to which data received from the  
13 first terminal in the first network[[,,]] should be passed, the address being for [[an]] a second  
14 address translator having a second range address in the second address range and being situated  
15 in the second network, the second address translator ~~in the second network~~ being adapted to pass  
16 data received at the second range address to the second terminal,

17 whereby two-way communication is established between the first and second terminals  
18 via the first and second address translators.

Appln. Serial No. 10/032,414  
Amendment Dated September 12, 2007  
Reply to Office Action Mailed June 13, 2007

16. (Currently Amended) A method of translating addresses between terminals in first and second packet-switched networks having first and second address ranges respectively, the first address range overlapping with the second address range, the method comprising:-

[[a)] receiving at [[an]] a first address translator in the first packet-switched network notification from a call server of the address of a first terminal in the first packet-switched network which will be sending data, the call server being communicatively coupled to the first address range and the first address translator having a first range address in the first address range,

[[b)] receiving notification of an address of a second address translator in the second packet-switched network, the address being a second range address in the second address range and being the address to which data should be sent when received by the first address translator from the first terminal in the first packet-switched network,

[[c)] receiving data from the first terminal in the first packet-switched network and forwarding, by the first address translator, the data to the ~~notified destination~~ address of the second address translator

~~wherein the first address range overlaps with the second address range.~~



Appln. Serial No. 10/032,414  
Amendment Dated September 12, 2007  
Reply to Office Action Mailed June 13, 2007

1 17. (Currently Amended) Software in a computer readable medium which when executed on  
2 suitable hardware in [[an]] a first address translator in a first network causes the hardware to  
3 carry out the steps of:-

4 [[(a)]] receiving notification from a call server of the address of a first terminal in the  
5 first network which will be sending data, the first network having a first address range, the call  
6 server being communicatively coupled to the first address range and the first address translator  
7 having a first range address in the first address range,

8 [[(b)]] receiving notification of an address of a second address translator in a second  
9 network, to which data should be sent by the first address translator when received from the first  
10 terminal in the first network, the second network having a second address range which overlaps  
11 with the first address range and the address of the second address translator being a second range  
12 address in the second address range,

13 [[(c)]] receiving data from the first terminal in the first network and forwarding the data  
14 to the ~~notified destination~~ address of the second address translator, the second address translator  
15 being adapted to pass communication sent by the first terminal and received from the first  
16 address translator to a second terminal in the second network having an address in the second  
17 address range.

1 18. (New) A first call server according to claim 6, which arranges for the originating  
2 terminal to view a first virtual gateway in the address translator as a destination for the  
3 originating terminal, wherein the first virtual gateway has the first range address.

1 19. (New) A first call server according to claim 18, which communicates with a second call  
2 server in the second packet-switched network to cause the second call server to assign a  
3 destination address of a second virtual gateway in the address translator as a destination of the  
4 destination terminal.

Appln. Serial No. 10/032,414  
Amendment Dated September 12, 2007  
Reply to Office Action Mailed June 13, 2007

- 1 20. (New) A first call server according to claim 6, which communicates with a second call
- 2 server in the second network to cause the second call server to assign a second range address of
- 3 the address translator as a destination address of the destination terminal, the second range
- 4 address being in the second address range.